

VOLUME I

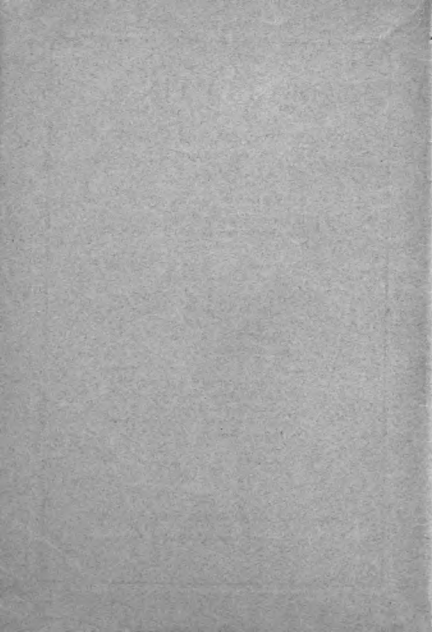
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BULLETIN

OF

American International Corporation

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THE American International Corporation, organized by bankers, business men and engineers of the United States, aims:

First—To establish friendly commercial relations with all countries of the world;

Second—To participate in the development of such enterprises—domestic or foreign—as will broaden the scope of American activities and lead to a better understanding of international relations;

Third—To promote the organization of corporations or associations to bring together foreign and American bankers, business men and engineers, for the transaction of business and the development of undertakings which will be mutually advantageous.

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CONTENTS

	PAGE
THE BRANCH	4
Summary	10
New Florida Woods and Sawmill Administration. In Talks, Reports and Materials.....	18
Transportation: Oversee Shipments of Machinery and Equipment.....	26
Construction, Scope of Job Program.....	31
Current Fore Management in the Job.....	33
Notes.....	34
Business of Customers: Financial Condition, Government and Trade Re- lations.....	47

American International Corporation

THE BULLETIN

THE object of the *THE BULLETIN* is to give an understanding and appreciation of the Corporation's purposes and activities, to keep interest alive and intelligent, and to promote co-operation.

At the time of the formation of the American International Corporation in the fall of 1913, it was anticipated that the Corporation could perform an important service for this country and the world at large, by undertaking the financing and construction of public utilities in countries where such service was needed, but where neither the financial resources nor the engineering skill were available to make such improvements possible. At that time our country did not contemplate entering the war and the resources available for foreign investment were large. England, France, Belgium and Germany had for many years prior to the war provided large amounts of capital and furnished the initiative for developments of this kind. The market for foreign securities was established in these countries but American investors as a class did not understand foreign investments and were timid in regard to them.

In pursuance of the purposes for which the Corporation was formed, several important enterprises of this nature in various countries have been investigated, and in some cases the investigations have reached the point where development can be undertaken on a large scale as soon as financial conditions warrant. At present, however, it is felt that the first duty of our organization is to use its financial resources and such skill as it possesses in helping to finance and otherwise assist the many governmental undertakings which the United States' entry into the war has made necessary. But at the same time this Corporation has not lost sight of its primary purpose, and is continuing its preparation for foreign enterprises, in co-operation with our allied countries, when the war comes to a close.

A few of the enterprises undertaken during the year 1918 will be completed. One of them, except for a few minor details, has already been finished, and it is the purpose of this number of the *BULLETIN* to present to our stockholders, directors and the members of our organization a somewhat detailed account of the construction of water works and sewerage systems for the cities of Mercedes, Paysandú and Salto in Uruguay.

These cities rank next in size and importance to Montevideo—the capital of the country. Their sanitary conditions were unsatisfactory and the Uruguayan Government, considering an immediate improvement necessary, proposed a con-

tract involving about \$1,000,000, which provided for the purchase of bonds of the Uruguayan Government and secured the services of American engineers and contractors to undertake the work.

American International Corporation, after a careful study of the conditions on the ground by its own agents, entered into a contract to purchase about \$4,000,000 of the Uruguayan Government bonds and made arrangements with the Tien Contracting Company as contractors, and Messrs. Stone & Webster as engineers, to construct and supervise the work and to purchase, each, a portion of the total amount of securities in excess of \$4,000,000 required for the completion of the work.

This document describes the execution of the work. The most difficult problem encountered was to provide the necessary transportation for supplies which had to be sent from this country. Freight rates to Uruguay rose so rapidly from July, 1916, to July, 1917, that for a time it seemed impossible to transport, at a permissible freight rate, the required amount of piping and other materials. This situation was met by purchasing one sailing vessel and chartering others, making it possible to transport the supplies and complete the contract about a year earlier than contract requirements. It is also worthy of notice that, notwithstanding the increasing cost of materials, supplies and transportation from the United States, and the rise of exchange on Uruguay affecting the wage-rate, the cost of completion came within the original estimates.

LOOKING TOWARDS URUGUAY

AREA OF INTEREST TO THE NATIONAL ARCHIVE
CONSTITUTED BY THE
THE NATIONAL ARCHIVE SURVEY GROUP, 1988



THE REPUBLIC
OF
URUGUAY
— WITH —
PRINCIPAL CITIES



Scale, Portuguese and Spanish, and the next towns in size after Montevideo are shown. The names of the cities shown are in Spanish. The names of the cities shown are in Spanish.



WEALTH OF CHILE

REPRODUCED BY KINDNESS OF THE NATIONAL WEALTH

- [1] Wealth is largely in the stock of which there are 65,000,000 Head
- [2] Building of the "Asociación Rural del Uruguay"—the chief Organization for the Promotion of the National Wealth of the Country
- [3] Calle Roson, Montevideo
- [4] A Wool Packing Room. The Wool Production for 1917 was 100,000,000 lbs.

Uruguay



FOR almost one hundred years Uruguay has maintained herself an independent state with republican government, and she has achieved an enviable record for business and upright dealing. Her location stands to her great commercial advantage for she shares with the Argentine the gateway of one of the greatest systems of inland waterways in the world. The broad estuary of the River Plate, entering wedge-like between the two countries, receives annually a flow greater than the combined rivers of all Europe and draining a territory larger than China.

A vital feature of Uruguay is the Uruguay River which provides deep water transportation and contributes to the commercial importance of the town on the western border. From the River the country derives its full name, Republica Oriental del Uruguay—the republic east of the Uruguay. It was nicknamed by pioneers who first viewed its attractions from the region lying west and south which is now the Argentine, and not from the north and east as does the latter-day visitor from the United States.

Livestock, raised on the broad, rolling, well-watered plains, which are Uruguay, is the chief source of the country's wealth. On her area, little larger than the New England States, the Republic supports some 32,000,000 head of sheep, cattle, horses and pigs. Cattle inspection and treatment are highly developed under the Department of Industries, Labor and Commerce.

Montevideo, with 400,000 people, 60,000,000 tons of shipping annually, and harbor improvements which have cost many millions, is in many respects the queen city, as Buenos Aires is the empire city of the Plate. The seaside resorts of Montevideo, patronized by the citizens of both cities, are famous.



WALL AT PORTER BRIDGE



VIEW OF HARBOR, PATERSON'S AND MONTGOMERY

Port Improvements at Paysandú

Customs and River-Plate Bank at Salto

Place at Montevideo

THE THREE CITIES IMPROVED

With characteristic energy and initiative, Uruguay in order to conserve the good health of her people, has outlined a comprehensive scheme providing all of her centers of population with an abundance of clean water and also with adequate sewage disposal systems. The present description deals with the first great step in realizing this plan, consisting of installation of complete systems in Salto, Paysandu and Mercedes, the three towns standing next to Montevideo in size and importance.

These are thriving places with populations as follows: Paysandu, 22,000; Salto, 20,000; Mercedes, 18,000. Previous to the completion of the present contract they had managed to get along with primitive water supply and inadequate sanitation, aided by their healthful climate and fortunate situations on two great rivers. Salto and Paysandu are on the Uruguay River, a large stream, while Mercedes is on the smaller, though only less important, Rio Negro, so named because of its dusky color leached from the rich soil of the country which it drains.

All three cities owe their importance chiefly to the live stock industry. The Department of Soriano in which Mercedes is situated leads the nineteen departments of the Republic in the latest live stock census with 2,500,000 head. Five of the departments have from 1,800,000 head to 2,400,000 head, and among these five leaders are the Departments of Paysandu and Salto, bearing the same names as their chief cities.

Close to Mercedes on the Uruguay River is Fray Bentos, a center of the Uruguayan packing industry. Here is produced most of the dried meat and beef extract found in the list of exports of the grazing and meat industry which totalled about \$70,000,000 in 1915. The weight of grass fed cattle in Uruguay compares favorably with corn fed cattle in the United States.



UNLOADING PIPE IN MONTEVIDEO HARBOR FOR SALTO, PAYSANDU AND MERCEDES



INDIAN WATER SCENE

- 1 Dipping Water from the Company River
- 2 Well at Indian
- 3 Old Well With Pump

- 4 An Indian Laundry
- 5 Riverside Laundry
- 6 Water Cart



MINOR WATER WORKS

- [1] The Ungeyo, Unfilled Near Salt Lake
- [2] Boiling Pumps
- [3] Lagoon of Two Steamships at Salt

- [4] Towing on the Water at Salt
- [5] Pumps Installed
- [6] Ground Water on Water Main



One of the most promising agricultural industries of Uruguay is viticulture and the number of vineyards increased from 18 in 1836 to 704 in 1865 and 1455 in 1945. In this industry the Department of Salto ranks second, Paysandú sixth and Soriano eighth.

Uruguay produces 540,000 tons of wheat and 190,000 tons of maize annually and these crops contribute materially to the business prosperity

of Salto, Paysandú and Mercedes. Oranges and tangerines are grown to the value of \$1,000,000 a year, and Salto is the center. It is evident that, for such towns, attractive and livable in all other respects, modern water works and sewers had become a necessity, and they are now completed. The day of the dream and carrier of water, driving his water belly deep into the river and filling his cart with the clappings from banks and wheels, is passing, likewise the industry of washing clothes at the river bank, frequently within conversational distance of the driver loading his daily supply. Bath-houses and sun-pools also before long will be things of a bygone day in the three towns.



CATHEDRAL OF SALTÓ



Photograph of Public Works
the Coliseum, Toronto, the
Largest Street in the West
(ground)



Water Works and Sewer Disposal System
(Water Pipes, red; Sewer Pipes, green)



The new water works for Salto and Paysandú consist of a pair of 100 feet-high steel standpipes in each town, acting both for storage and pressure regulation. Water is pumped to these standpipes before going to these standpipes, the pumps themselves and finally the distribution systems of each town pipe. In Mercedes the standpipes are replaced by a concrete reservoir on a hill overlooking the town. There are fire hydrants on the street mains set back with the sidewalks and with these are combined taps where people may draw water.

The sewer systems, consisting of concrete mains and pipes, provide for removal of storm water from the streets as well as sewage from the houses. As the rainfall is abundant, averaging about 40 inches annually, the disposal of storm water was an important consideration. In Mercedes there were storm gutters on some of the main streets, wide and deep enough in places to endanger the life and limb of the unaccustomed stranger, according to a well-known writer.

These works, while of no great engineering magnitude separately considered, represented a considerable undertaking when carried out at one and the same time or rather as overlapping sequences and in face of the general disturbance of supply and transportation due to the war.

Over 100,000 tons of materials entered into the construction and were handled and installed in a period of eighteen months, a far less than the time called for in the same task.



Flour-Mill Plant at Paysandú. Wood Fuel Stacked on Wharf.



Panorama of Pinar del Rio looking towards the Uruguay River



*Pinar del Rio Water Works and Sewage Disposal System.
(Water Pipe, red; Sewer Pipe, green)*



SCENES OF HONOLULU AND NEIGHBORHOOD



Minneapolis, sprawling
along the Rio Negro



Minneapolis Water Profile and Sewage Disposal Systems
(Water Pipes: red, Sewer Pipes: green)



FROM THE DECK OF THE "ALBATROSS" LOOKING SOUTHWARD



Mexico City, overlooking the Rio Negro



Mexico City Water Works and Sewage Disposal Systems.
(Water Pipe, red; Sewer Pipe, green)



THE FLEET THAT WORKED FOR THE JAP.

- [1] The "Alice M. Colburn" is berthed at Montevideo after circumnavigating China
- [2] Bark "Steward" unloading at Montevideo
- [3] Schooner "Jesse Jones" at dock at Montevideo
- [4] Unloading Pipe from the hold of the "Steward"

Transportation



When the contract was undertaken, the war was already in full swing, ocean freight carriers were in demand as never before, ocean freights were astronomical, and the railroads were refusing to accept freight destined for Antarctica. Thus was the prospect with 14,000 tons of material to be shipped to the job from factories in the United States.

As a solution, the "Alice M. Colburn" was bought and arrangements were made for chartering three other ships. Savannah was picked as the port of loading. Railroad shipments were begun, and men were detailed to ride with the freight and use every possible means of keeping it on the move. The men

on the job, who had gone ahead by steamer to organize and get ready, eagerly looked for the news of the first large cargo.

The "Colburn" with pipe for Sella left Savannah on the 1st of June, 1916, and dropped anchor in the outer harbor of Montevideo on August 28, after a voyage of 60 days. Three days later, she left with water for the trip upriver. Low water necessitated unloading at Paysandu, 420 miles from Montevideo, and for the remaining 70 miles to Sella the cargo was put on the railroad, arriving at its final destination about the middle of September, or some four months from the time it left the factory.

The "Colburn" raised sail for the return voyage October 14, speeded by promises to the captain and crew of extra clothes if they reached Savannah before Christmas. For the return cargo she carried the dead island of Argentina on file.

The star voyage of the fleet was the next one which was made by the Norwegian bark "Skjenned." She arrived on December 25, 1916, 57 days out from Savannah with a \$1700-ton cargo which permitted the Sella water works to go ahead without delay. Captain Kildahl was the recipient of congratulations for the quick voyage, which was even more remarkable than supposed, as three days had been lost in a storm off the mouth of the Rio de la Plata. The dock authorities at Montevideo granted a special permission by which the cargo was transferred directly to the ice without the usual formality of warehouse inspection.

The next cargo was brought by the "Jesse Jones," a new five-masted schooner from Bath, Maine. She arrived on May 24, 1917 with water pipe for Mendoza. Although arriving at a different season she, like the "Skjenned," ran into a storm off the coast which cost her 11 days and made her total voyage 50 days.

The "Colburn" on her second trip followed the "Jones" in less than a month arriving at Montevideo with pipe and power house machinery for Paysandu on June 29. She encountered the usual storm, but in spite of it she registered 32 days from Savannah, 17 days better than her first voyage and the second best of the fleet. She was severely buffeted by a "pampero," so these storms coming up from the Antarctic are known, in consequence of which she had to go into dry-dock. She loaded a cargo of iron and ground iron and sailed northward July 25. This

was the first "round trip," and as will be seen required a little more than 4 months.

Arrival number five was the "Eden" with a final cargo for Mercedes and Pysoundia, and she was the slow boat of them all, requiring 48 days and making port on August 16. She also carried coal for the government, which had to be weighed as it was unloaded, taking further time for the shipment destined for the job.

The distance from Savannah to Montevideo is 5,000 miles by the direct steamer route. The four ships therefore journeyed a total of not less than 45,000 miles on the five voyages made for the job. As sailing vessels they had to catch well and onto the Atlantic to get the benefit of favoring winds, and it is probable that they covered an aggregate distance equal to nearly five times around the earth. There is no doubt that the fleet contributed its full share to the completion of the work a year ahead of time.



Construction



THE actual construction work on the contract was officially begun at Salto on July 27, 1913, in the presence of Engineer of Works—Don Pedro B. Magro, — and other government officials and representatives. Excavation was opened for the 48 inch main collector of the sewer system, and a section of the concrete was cast to demonstrate to the government that plastering was not needed where steel forms were to be used.

Concrete set up in wooden forms, from the Uruguayan opinion of what a finished job should look like, requires plastering, but it was planned by the construction to use steel forms on the main sewers throughout and when the government saw the class of work turned out on the first test section at Salto they decided that plastering might be dispensed with.

Concrete of a sufficiently high grade to insure that the government's idea would be met with was bought for the entire work from a plant in Montevideo. The sand and gravel, also of excellent quality, were dredged from the Uruguay River at Colonia, opposite Buenos Aires, and brought in barges directly to the work. The gravel was a rhyolitic agate quartz. The total amount of cement used was 13,500 tons.

The supplies and materials bought locally, that is in Uruguay, amounted to about 100,000 tons and those shipped from the United States to 13,000 tons of which 12,000 tons was cast iron water pipe and the remainder principally machinery.

The work was not begun at Paysandu and Mercedes simultaneously with that at Salto. The considerable amount of concrete equipment used principally on the sewers was moved from Salto to Paysandu and afterwards to Mercedes. The Paysandu job office was organized in October, 1913, and sewer construction began soon afterwards. The work at Mercedes began less than a month later with the excavation for the reservoir for the water works.

The concrete equipment used exclusively for the three towns consisted principally of a very interesting cement pipe making plant, the work of which is described later, and of collapsible steel forms with steel rib-braces used in the construction of the monolithic trunk sewers of 84 inches, 48 inches and 36 inches diameter, all smaller ones being laid with cement pipe from the pipe plant.

The economy practiced in having only enough of this extensive sewer making equipment to serve the work in one of the towns at a time brought with it no loss of time on the night men's watch, for final completion in any event would have had to wait on the receipt of the shipments of water pipe and water works machinery from the United States. As it turned out the sewers were ahead of the water works all the way through but this was due as much to efficient handling of the sewer machinery as to tardiness of arrival of water works equipment.

The combined length of sewers in the three towns was 85 miles but the great



unauthenticated by post office

- [1] Government Inspection Party
- [4] Sr. Pedro B. Maguon, Engineer of Works
- [5] Don Pedro C. Rodriguez, Secretary to Minister of Public Works

- [6] Sr. Alberto F. Castro, Consulting Engineer

- [7] Inspection Party Welcoming the First Cargo of Pipe



SEWER DRAINAGE COMPLETED AND IN OPERATION

Setting Tank at Payamko
 Trench Work needed on Sewing for Public Sewer
 Main Sewer Outlet at Payamko from Within
 Main Sewer Outlet at Payamko from Without



Francis Mann and Employees between Storage Tanks

ground and cement, were mixed and turned into the finished product. The work went ahead at the rate of \$14,000 a day, and of this, the payroll made up less than \$5,000. In other words some \$9,000 of raw materials was fabricated or transformed into precast concrete blocks every day. The construction of Payson's water works had not then spread up so much of the cost, even pipe or water works machinery appear in the above cost. It all went into processes of manufacture and installation carried out on the ground.

At this time, or on March 15 to be exact, the Salto sewers were completed. They were two weeks ahead of the 18 months schedule arranged for the water works and sewer construction as a whole and considerably within the estimated cost for these portions.

The combined length of water works for the three towns was 86 miles, closely approximating the length of sewers. Instead of a steady rise in the curves of

perpendicularity of this mileage was in the smaller runs made by the pipe plant. The proportionate amount of the large monolithic trunk sewers, cast in place, is shown in the reports from Salto where there was laid three miles of monolithic sewer as against 16 miles of cast sewer pipe. As shown by the photographs the largest monolithic conduits were not circular in section but were of special section, circular at the upper half and elliptical or oval at the lower half.

The sewer machinery moved from Salto to Payson in January 1, 1917, got through there and was moved to Mercedes in April, and by September 1, one year and one month after breaking ground, the sewers for the three towns were practically completed. Probably the most impressive program made on sewer construction was at Payson in the spring of 1917. In two months nearly half the raw materials for sewers, in the shape of sand



Salto Power House

water works progress in respective forms, as in the annex curves, there are a series of steps corresponding with the arrivals of the various crops of water works materials. The water works curves for Payson and Marsden show approach after the arrival of the "George Jones" in May, 1917, and take another dash with the second coming of the "Colburn" in June. Then they slacken till the arrival and release of the crops of the "Edna" in the early fall when they take their final ascending dash to the finish of the job.

The beginning of the end in the construction of the water works showed up in the October, 1917, report from Salt Lake with the statement that the machinery and distribution system had been successfully tested and the tanks filled. The pumps started on September 18, a week less than one year from the laying of the first pipe in 1916.

The excavation of 170 miles of trenches for sewer and water pipe was an important part of the work and the system with which it was attended appears in the pages on "Labor" which follow. Trenching machines and a steam shovel were used but most of the work seems to have been done by hand labor with rapidity and economy. In some places machine excavation at best would have been difficult because of the uncertainty of the ground.

The total mileage in 170 miles of trenches, many of them very deep as the photographs show, will be appreciated from the fact that a single mile of 3 feet by 4 feet trench contains 3,168 cubic yards.

All kinds of material were encountered ranging from solid rock and Town to black river mud. Rock appeared in unexpected locations, and in some of the deeper trenches the Town was penetrated to the underlying country rock of which it was made.



Lead Coated Pressure Main



The main Power House
Drawing Completed



[1]



[2]



[3]



[4]



WATER RESERVOIR, COMPLETED AND IN USE

[1] Constructing Uluu Water Reservoir at Salla

[2] Uluu Water Reservoir at Salla Completed

[3] Settling Basin at Salla Before Backfilling

[4] Salla Settling Basin Under Construction



SEWER CONSTRUCTION

- [1] Mercedes River Outfall
- [2] Mercedes River Outfall

- [3] Forming Mass Concrete in Two Sections
- [4] Placing Forms for Top Section Section



WATER WORKS, COMPLETED AND IN PROGRESS

[1] Constructing 4 inch Water Main at Tulsa

[2] 4 inch Water Main at Tulsa Completed

[3] Settling Basin at Tulsa Below Docking

[4] Tulsa Settling Basin Under Construction



GENERAL INFORMATION

- [1] Mammoth Spring Gashall
- [2] Mammoth Spring Gashall

- [3] Flaming Main Section in Two Sections
- [4] Flaming Main Section in Two Sections



CONCRETE PIPE MANUFACTURING AND THE PIPE

- | | |
|---------------------------------------|-----------------------------------------|
| (1) Pipe Storage at Salto | (4) Workshop that Cast 20 Miles of Pipe |
| (2) Section of 14" Pipe One Month Old | (5) Unloading Pipe at Salto |
| (3) Pipe Storage at Paysonville | |

Cement Pipe Manufacture on the Job



THAT is the remarkable thing about you North Americans. You come down here and make a cement pipe in thirty seconds when it used to take us thirty minutes to make the same thing—and now you say that you will finish your contract a year sooner than the time we have allowed you.” In these words the Minister of Public Works of Uruguay commended the work of the Ulen Contracting Company on the entire job, taking his text from that part of it that actually played the leading rôle in getting down time.

The above quotation is especially interesting, in view of the fact that when the work started the Government's representatives were somewhat skeptical as to whether the product of the pipe-making plant would be sufficiently high grade. A smooth, impervious and strong pipe was demanded, smoothness of surface being much stressed, as influence, no doubt, of the beautiful architectural effects obtained with skillful plastering in Uruguay.

Before the pipe was accepted, it was tested in the Government Laboratories for tightness and for strength against internal pressure. The results were most satisfactory. None of the pipe was broken at the prescribed pressure of twenty-two pounds per square inch. The average strength of those tested in breaking was fifty pounds and the strongest one stood sixty-five pounds, equivalent to a water head of one hundred and fifty feet. The pipe was also tested by external mechanical pressure and the eight-inch one held up to 14 tons. It broke into equal fourths showing a remarkable uniform structure. The test for imperviousness consisted in putting on the pressure from a column of water twenty feet high. Under this test the surface of the pipe became moist, but there was no collection of water.

The pipe plant began work at Salto and in the first two months produced half the pipe required for that town. It was then operated on double shifts and within six weeks had cleared up the Salto quota and was ready to be moved to Paysandú. Here, beginning January 24th, 1919, it was put on three shifts working the full twenty-four hours and in two months, or about fifteen days more than one-half the time estimated for the whole job, it had completed the Paysandú quota and was being dismantled to go to Mercedes. Pipe making began at Mercedes the first of May and in two months and a half all required for that town was met and the plant went on making an extra supply of pipe for the Government.

The rate of a pipe every thirty seconds, as mentioned by the Minister of Works, was actually attained, but the sustained rate was a pipe every forty seconds. Most of the cement and sand used on the job, amounting to about 60,000 tons, went through the pipe machine and the total output for the three towns was eighty miles, the sizes ranging from eight inches to twenty inches diameter, and the whole product was smooth as velvet pipe on the inside. The wisdom of having abandoned all thought of having never pipe shipped from the United States was apparent as soon as the plant got into operation.



[1]

[2]

[3]

[1] Action of Gambo Laborer

[2] Ben Foster who dug 1000 cubic yards in a day and who discovered 40 cubic yds. of tin

[3] From Laborer

Labor



KINGSTON is not the land of "Matamoros"; in other words, she is not a lazy man's land. Labor is paid a peso, or a little more than a dollar for eight hours of work and every centavo of it is earned. The peons are mostly Italian and Spanish mixed with Indian blood and they make excellent workmen. It was wholly native workmen, however, very largely, by native foremen who dug the 170 miles of trench for water and sewer lines. With road at

\$25 to \$40 a ton, trenching machines and the steam shovels found it hard work competing with the labor and did comparatively little. Six and one-half cubic yards of deep excavation is eight hours for one dollar is hard to beat. In Paysonville some of the trench work was put on the task basis with the above amount as the day's work. When the men learned they could earn more than one task by working longer or harder, the system became popular. Little supervision was necessary and one foreman took care of a gang of 120 men with ease.

The popularity of the company was attested by the way in which the men followed the work from one town to another. In the progress report of June, 1917, it is related how the men went from Paysonville to Mercedes by boat, by cart and about, the road between the towns looking like a pilgrimage. Some of the peo-

gang went along two miles ahead in order to be sure of being on the ground when the work started. Recording numbers, the reports show that there were 1,600 men on the job in Paysandu in April and that at Mercedes in August, before the work there reached the peak, there were already 1,600 men.



Laborers Following the Work from Paysandu to Mercedes, 4 days on the Road

The progress of the job was not impeded by labor troubles. Two of the most important contributing factors to uninterrupted progress were the very efficient policing of the work by the government, and the enthusiasm of the better class of workmen for the job.

One instance may be cited to show how little sympathy the professional agitator receives in Uruguay. In Mercedes, a local organization announced a "manifestation." There were at that time more 1,600 men on the job, working hard and ignoring trouble. In spite of much advance advertising, only about fifty young men and boys answered the call and formed a procession.

This meagre band of agitators came to a ditch where a gang of piece-workmen was hard at work. They made the great mistake of first accusing the six-foot Brazilian pictured on the opposite page. Known to the job

as the "Little Martin" because of his prodigious capacity with pick and shovel. The Brazilian refused to notice the propagandists. One of them brought in evidence a big knife. Quicker as a flash the Brazilian leaped from the ditch, and brandishing his pick charged the subversives, who took to their heels without more ado.



Pag day at Salto—A Good Natural Crowd



MILITARY POLICE AND FIRE DEPARTMENT ORGANIZATION OF TIENTSIN

- | | |
|-----------------------------|-------------------------------------------|
| [1] Motor | [5] Engine on Caravan, used to the mobile |
| [2] Infantry Fully Equipped | [6] Traffic Policemen - Motorcycles |
| [3] Motor Chemical Engine | [7] Selfie Policemen |
| [4] Motor Fire Engine | [8] Mounted Policemen |

Resources of Uruguay

URUGUAY has an area of 76,000 square miles. About 4,000,000 acres are at present under cultivation, and some 50,000,000 acres are used for grazing cattle. Most of the area is suitable for pastoral or agricultural purposes. It consists for the most part of gently rolling land, with timber in the valleys along the borders of streams affording shade for livestock. There are two low mountain ranges of about 5,000 feet elevation.



Uruguayan Gentlemen

POPULATION The population of Uruguay is about 1,500,000, an average of 19.5 to the square mile.

The last state census in 1930 gave a population of 1,500,000. Of this total 391,452 were foreigners, distributed as follows: 95,567 Italians, 14,945 Spanish, 47,568 Brazilian, 16,000 Argentine, the rest of various nationalities.

HISTORY AND POLITICAL CONDITIONS The original colonists and many of the later immigrants came from the Basque provinces. They were a sturdy, honest and hardworking people and the present generation has inherited many of their good qualities. An occasional trace of the original Indian blood is seen. There are very few negroes. Early in its history the colony was isolated from the Spanish settlements of the Argentine and was forced to defend itself against the Portuguese and later the Spanish monarchy. The Republic was recognized as an independent state in 1828 and its constitution was established in 1830.

FINANCES 1. *Governmental* The Republic has built up a good financial reputation, being the only South American republic that has not repudiated her debts and has kept her paper dollar at full face value for over 50 years. Her



Peace Mountain



Peaton Beach,
Montevideo

gold reserves at the present time in the Bank of the Republic are \$55,790,545. With the gold held in the legations and private banks the total is over 60 millions, greatly in excess of the backing needed for her money issues.

4. *Debt.* The total public debt of Uruguay on January 1, 1939, was \$147,500,000, or \$120 per capita.

Internal loans	\$54,540,000
External loans	101,071,507
International loans	6,150,500

Bonds aggregating \$11,400,000 were owned by the Government, \$194,000,000 were in the hands of the public, 37% of the external loans were owned by residents of Uruguay. At the beginning of the war European bankers were forced to withdraw from a promised loan.

The debt is secured in large part by the customs receipts which in 1934-35 were \$11,400,700. The revenue and expenditure for the current year are about balanced in budget estimates at \$90,000,000, but owing to the falling off of customs



Paseo
Independencia,
Montevideo

**Automobiles Parked
at Montevideo**



due there will probably be a deficit of over \$1,000,000, bringing the accumulated deficit up to about \$3½ millions.

3. **Bank.** The Bank of the Republic was organized in 1899 with a capital of \$5,000,000, which has been increased to about \$14,000,000. This is the only bank of issue and its gold reserves are now about double the required amount. In 1912 the Government established a National Insurance Bank and forbade the formation of any more new insurance companies in the Republic. In 1914 this bank made 54.7% of all fire insurance of the Republic.

4. **Monetary Standard.** The monetary standard is the gold peso, worth \$1.00. No gold coins have been issued however. Silver coins are the peso or dollar, weighing 45 grams, and half, 25th and tenth peso pieces.

5. **Private Wealth.** The total wealth of Uruguay is estimated at \$2,000,000,000 or \$1,000 per capita. \$1,418,000,000 is invested in cattle raising or agriculture. England is the largest foreign investor with a total capital of between \$140,000,000 to \$200,000,000.



**Harbor of
Montevideo**



Customs' Pavilion at the Bazaar,
Montevideo, July, 1917

Industry 1. *Agriculture.* The main industry of Uruguay has always been cattle raising and the marketing of cattle products. Almost 90% of the total annual volume of her business is connected in some way with cattle. Ninety-eight per cent of her total exports are animal products but only 4% livestock.

In 1913 the proportion of these products was as follows:

Wool	840,000,000
Hides	55,000,000
Meats and Extracts	56,854,000
Livestock	1,000,000
Animal fat	1,540,000
Corned	800,000

The raising of cereals is now growing in importance. The area planted to wheat increased from 194,498 hectares in 1906 to 511,000 in 1912 and with the increasing wheat shortage will probably grow rapidly. "El Espectador" for August 11 estimates the surplus of wheat for export this year at 800,000 tons; the excess of area sown to wheat over last year is given at 50% by the "Bazar" of August 11. Alfalfa is also a coming crop, grown for its effect on impoverished pasture lands as well as its intrinsic value as fodder.

The wine industry is also growing. In 1914, 15,647 acres were planted to grapes and 4,521,240 gallons of wine were produced.

Limited and tobacco are also profitable crops.

2. *Manufacturing.* The only manufactures in Uruguay of importance are those connected with the animal industry. These include large meat packing plants near Montevideo, in which a large amount of North American capital has been invested, and the Lartaga Beef Extract plant at Fray Bentos. There are



Welcoming the United States Fleet, Montevideo, July, 1917

numerous small manufacturing plants, among these being a modern cement factory and several hat factories. A large output of hides and of wool, the comparative value of which is shown above, is exported. The net increase over normal in the price of hides in 1915 was 500%—415,000-000, the country also enjoyed a large advance in the prices received for wool and other products.

5. *Mineral.* There has been very little development of the mineral resources of Uruguay. Some gold mines are worked in the northern part and Uruguayan smoky quartz, topaz and waterstones are well known. One cement manufacturing plant has developed quarries from which its cement material is obtained, and some very good marble and building stone deposits are known to exist but have not been exploited to a great extent. There are large deposits of gravel and sand suitable for construction purposes in the western part of Uruguay, from which the local demand is supplied. Owing to the scarcity of this kind of construction material in the vicinity of Buenos Aires, practically all that is used in the construction work there comes from Uruguay.



Representatives of the Uva Company joining in the Willows in the United States Fleet, July, 1917



'Alber M. Cullum' Ship of the Uva Company, doused in Will come to the United States Fleet, July, 1917

4. *Streams.* Uruguay is plentifully supplied with streams. Those with frequent runfalls make the country less subject to the dangers of severe drought than other parts of South America. Uruguay being dependent upon imported fuel, considerable attention has been devoted to the possibility of developing water power. This has met with little success owing to the lack of suitable falls in the streams.

Trade. The export trade of Uruguay is dependent upon her pastoral and agricultural industries. The total export trade increased from 41½ millions of dollars in 1904-11 to 73 millions in 1914-15. The proportion of animal products in 1915 was 53%, and in 1910-11 approximately 60%. The only other important export products are wheat and linseed.

There being few local industries, the articles that make up the export trade embrace everything required by a developing and progressive pastoral and agricultural country.



Unloading Sand and Gravel from River Barges

Great Britain and France have led in the forwarding of imported articles to Uruguay. The United States is third with imports of \$6,171,000 and exports of about \$5,000,000. The trade with the United States, both import and export, has greatly increased as compared with that with other countries during recent years. The imports were about normal for the preceding five years, but the exports were more than double the average.

Railroads. Uruguay's total mileage for the nine railway companies open for traffic at the end of 1916 was 1,230 miles. One thousand and sixty were under State guarantee of earnings of 3-5%, or \$10,000 per km. of main line and \$14,000 per km. of branch line.



Steam Shovel in Operation

The total capitalization of the roads on December 31, 1916, was \$55,000,000, \$43,000,000 being common stock. In 1912-14, 2.97% was earned on this capital which with the State guarantee amount a total yield on the capital of about 3.4%. The railroad companies are all English. The government of Uruguay has always fulfilled its obligations to the foreign railway companies.

1. *Central Uruguay*. The Central Uruguay train connects Montevideo with Mercedes, Melo, Treinta y Tres and Minas, passing through a developing agricultural country. There is a through train service from Montevideo to Rivera on the Brazilian Border, connecting with the Brazilian railway system at Santa Ana across the border, it being possible to journey by rail all the way from Montevideo, Uruguay to Rio de Janeiro, Brazil. The Central Uruguay lines constitute 49% of the total mileage of the country and carry 90% of the passengers and 88% of the tonnage.

2. *Midland Uruguay R.R.*—This road has 628 miles of track from Rio Negro to Salto with two branches and a capital of \$64,350,000. It serves a wholly pastoral country, carrying cattle and wool. There is an extension to Foz de Iguazu, which is becoming one of the important ports on the Uruguay River, being the site of the Locking Hoof Extract plant.

3. *Northeastern of Uruguay*. This road has 110 miles of track, running north from Salto through Santa Ana and Isla Cabellos to the Cuareim River across which an international bridge is to be built. The chief importance of this road is to serve as an outlet for southwest Brazil. The portion of Uruguay which it crosses is not rich as that south of Salto and will not develop as far.

4. *Uruguay Northern Ry.* This road has 70 miles of track running from Isla Cabellos northeast to San Rafael on the Cuareim through a sheep raising district. Its best chance of future development is as another outlet for southern Brazil.



School Boys at Salto, Watching the Steam Shovel

2. *Uruguay East Coast Railway Co.* This road has 74 miles of track, beginning at Olivos Acortado on the Central Uruguay Northeastern and running along the southeast coast to Maldonado, through a rural country, serving 27.4% of the total coastal acreage of the republic.

Shipping. In 1916 a total of 41 steamers with a registry of 26,000 tons were flying the Uruguayan flag. In addition to these there are a number of sailing craft registered under Uruguayan laws. Up to recently the Uruguayan navigation line had offered special attractions to vessel owners. The Milnworth Company operates one of the important steamship lines, both passenger and freight services between Montevideo and Buenos Aires and ports up to the Panama and Uruguay Rivers. Some of these steamers are modern in every respect. It is understood that this line has recently been acquired by the Royal Mail Steamship Company.

Communications. In addition to the facilities for communication by means of rail and water mentioned above, there is telegraph and wireless communication and a modern postal service with offices established throughout the republic. A modern telegraph system connects by means of cable as well as land lines with other South American countries, and the City of Montevideo has land and long distance telephone systems, including telephone connections with the City of Buenos Aires.

Cities. The Republic of Uruguay is divided into thirteen provinces, each with its capital city. Montevideo, with a population of 400,000, is the capital of the Republic, and the commercial and financial center. The other cities of most importance are those ports where produce from the surrounding country is embarked. These in order of importance are Paysandu, Salto, Colonia, Fray Bentos on the Uruguay River and Mercedes a short distance up the Rio Negro. There are a number of interior municipalities with from five to ten thousand inhabitants. They have few manufacturing industries and are merely centers



Mercedes River in under Construction

of agricultural and cattle raising districts and made up principally of prosperous-looking residences of persons engaged in those industries, with a few retail stores, banks, warehouses, etc. necessary to serve the local requirements.

1. *Montevideo*. Most of the imports and exports of the Republic of Uruguay pass through the custom houses at Montevideo. The customs statistics for 1906 indicate that 89% of the imports of the country and 71% of the exports passed through this port. There are a number of old Spanish buildings in Montevideo, many of its streets are narrow, but there are also many recently constructed buildings which, although modern, are patterned after the Spanish style of architecture to harmonize with surroundings. There are many wide streets and avenues. Most of the streets are well-paved and lighted. The entire city is served with modern electric street railroads. The light for the city is furnished by a modern well-managed electric light and power plant, operated by the government, which also controls the light and power plants in the cities throughout the Republic. Montevideo has a sewer and water works system.

Municipal Bonds. An issue of \$9,482,375 00% bonds were authorized in 1906, of which \$6,502,500 were still outstanding January 1, 1907. Interest in 1906 was paid in a further issue of bonds at par. From 1900 to 1904 interest was paid at 4%. From 1900 interest has been paid at 4% with 1/2% sinking fund. These bonds were for public works. They were guaranteed by the State.

2. *Paysandú*. The second city of Uruguay is important for its meat plants, the jacked beef establishments which are waning, and the freezing plants which are increasing. Its population numbers about 24,800.

3. *Frags Bentos*. This city is the home of Liebig's Extracts of meat. Its population it is still the behind Paysandú but with the development of its port facilities it bids fair to have a rapid development.

4. *Salto*. Salto has been looked upon as a possible future manufacturing centre in the event of the successful development of water power at the Salto Falls nearby in the Uruguay River. These Falls being so low, however, sometimes entirely disappearing during the hot weather, their utilization presents some engineering problems which it may be difficult to overcome.

5. *Mercedes*. This is a port on the Rio Negro. It has an important coal trade and ships about 800 tons of charcoal a month.

6. *Colonia*. This is the most historic town in Uruguay and is now declining though its port still does a good business. It is the nearest port to Buenos Aires. The Pomerania of Colonia is a promising dairy country in which the Swiss colony is building up a thriving dairy business.

Oversight. A great deal of attention has been devoted by the people to the improvement of the breed of livestock, by the importation of blooded animals from England and the United States. The Uruguayan Government has also given considerable assistance and encouragement along this line. There are possibilities of development in the raising of pigs and poultry and in the production of dairy products. No doubt the manufacture of leather goods

and other industries depending upon the cattle industry for raw materials will show signs of development in time.

As in many other progressive countries there has been considerable talk during recent years regarding state ownership of public utilities. The Uruguayan Government has successfully operated for some time light and power plants in Montevideo and other cities, and a small part of the steam railway lines. These undertakings have of course stimulated the usual propaganda for public ownership. That the situation presents no more difficulties than are found in other countries for the investment of private capital is indicated by recent heavy investments by North American interests in packing houses and in the purchase of government bonds for the construction of a sewer and water works in the cities of Salta, Puy-ma and Mercedes. There are a number of other possibilities for the construction of public works, in the nature of sanitary systems for other interior cities, the extension of the water works system in Montevideo and the harbor works at various ports.

In Uruguay we find a country with good lands, a favorable climate and industrious people, and a long-established cattle raising industry, together with a government that has the reputation of having always met its foreign obligations; all of these elements being favorable to profitable investment of private capital and further development of the country not only along the established lines but also in new directions.



Mr. Henry C. Voss, on Buenos Bay

